

Innovation for a more efficient healthcare



medipvitals 
Real Time Health



A background graphic consisting of several overlapping, curved bands of varying shades of blue and white. The bands curve from the bottom left towards the top right, creating a sense of motion and depth.

medipvitals





A **smarter** healthcare system starts with better interconnections, using more detailed and accurate information.

Today, the “smart” factor is present in almost every field, used with systems and processes that enable us to work with devices and technologies that were practically nonexistent only two decades ago. Millions of devices connected over computer networks and the internet create massive amounts of data. All this information has to be made available to turn knowledge into intelligence, so we can treat more people at a lower cost.

At **mediphealth** we contribute to technological advances, developing applications that improve clinical processes. And now, with **medipvitals**, we offer you a way to digitize vital signs and make them available in real time.

Our biggest challenge was to provide critical, advance information, and make it more accurate and accessible, to treat more people in less time. And we have achieved this by controlling information and developing a more efficient and sustainable healthcare system.

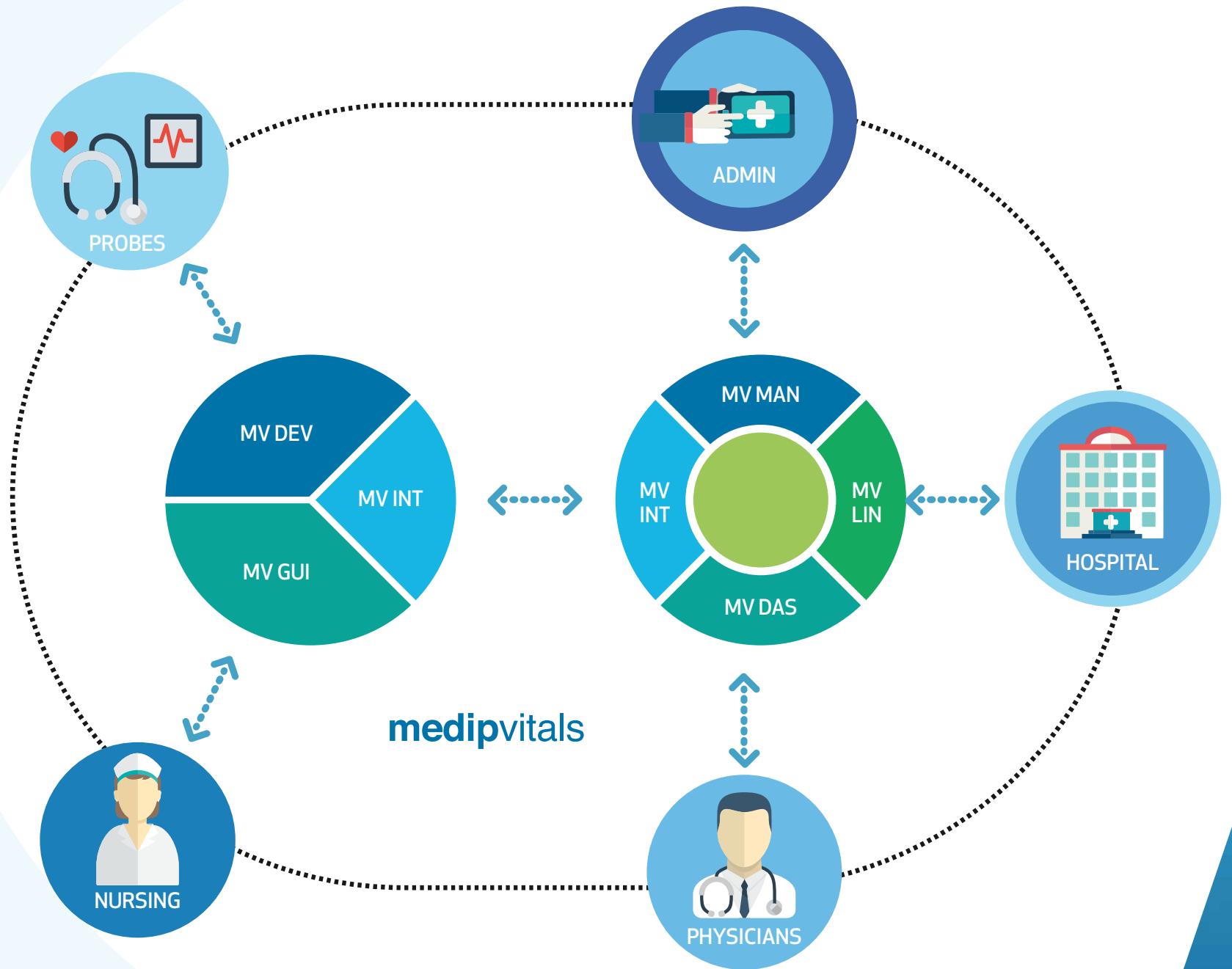


Obtaining free-flowing information faster and more reliably

We need to change the world to improve people's health. By incorporating smartness and applying new technologies correctly, traceability in the health sector can be improved.

medipvitals is a state-of-the-art software solution to ensure traceability for vital sign measurements, registering all vital sign information in real time via wireless devices so that patient progress can be analyzed to allow for more accurate diagnoses.

Our contribution to optimizing resources was to provide solutions to enable healthcare data to be fully traceable, appropriately managing information and making it available for immediate analysis. For instance, we know that if certain information is not available in real time, it is much more difficult to measure patient progress and make a good diagnosis. Solutions like writing data down on paper cause delays and may introduce error factors that at the very best can only provide sub-optimal solutions.



Innovating beyond the extraordinary

The medipvitals ecosystem

We have developed a new concept for managing vital signs based on a flexible architecture comprising two modules: **vClient** and **vServer**, allowing for full interaction between environments and components, and enabling patient monitoring information to be supplied or requested at any time.

Measuring vital signs has been made very simple using wireless monitors. **vClient** manages user and patient identification to dynamically display all vital signs on one screen, making it easy to verify, validate and store data.

vServer concentrates all patient information on a central server and shows the evolution of historical records to facilitate a more accurate diagnosis. Its advanced applications make it simpler both to manage and maintain the system, keeping everything under control.

The **medip** platform allows all device information to be adequately managed, ensuring connectivity, patient and user identification, and connection to external systems. The information therefore flows freely, with no delays and is available for use at any time or place.



Amplitude: 10mm/mV



Time: 25mm/s



Leads

I

II

III

aVF

aVR

aVL

V1

V2

V3

V4

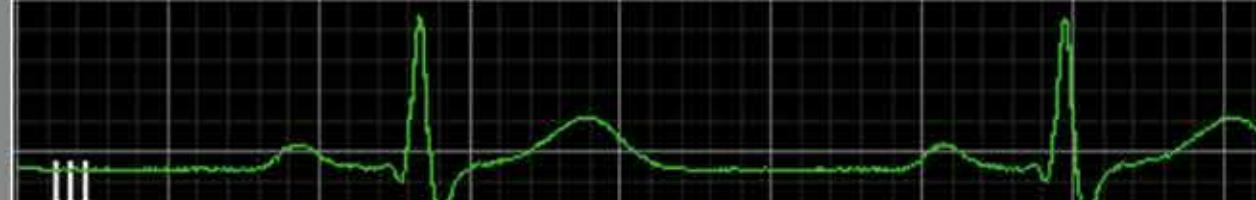
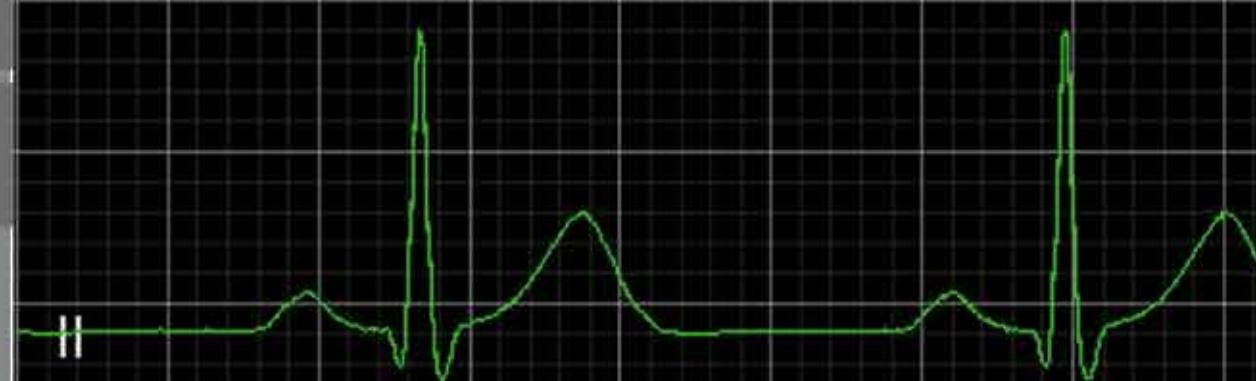
V5

V6



mediphealth

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Logical functionalities for ECGs

After years and years of filing paper documents, we find ourselves repeating the same movements. Until now, of course... Because at **medipvitals**, we know that making patient status data available in real time is critical. Up till today, every time a healthcare professional wanted to check an ECG, it was a true ordeal, requiring a physical search through patient records to find his or her printed reports. Now, **medipvitals** makes it a lot easier. With one touch of the screen, the vDashboard viewer displays all stored records – virtually as if the doctor were examining the patient at this very moment.

The ECG application also exports to printed file formats such as PDF or JPG, or data file formats such as HL7 a ECG, SCP-ECG or DICOM-ECG, which allow for transmission with a guarantee of data integrity and no quality loss.

Personalized information: the focus is on the patient.

What level of care does the hospitalized patient require?

We have implemented measurement scales on our interface to determine the patient's required nursing level of care (NLC*): pain level, ulcer risk, state of consciousness, patient's dependency degree, etc. **medip** integrates standardized scales such as Pain, Barthel's, Norton's or Glasgow's, and it also allows personalized scales to be generated.

Knowledge of the patient's status facilitates the determination of the level of care they require. The personalized data provided by the NLC permits a better evaluation of the level of care needed to improve patient condition and their recovery process.

This system is fast and easy to use, by either evaluating the patient (or questioning them following interface indications), and selecting the right option.

[*] Nursing Level of Care (NLC)

Barthel
Autonomía para las actividades de la vida diaria

Cuidar

- Independiente Cada 48 horas realiza actividades básicas, como cocinar la comida, lavar la ropa, usar el baño, etc.
- Necesita ayuda Puede realizar la tarea a su paso, necesita la ayuda de otra persona para ello. Tareas de cocina/baño realizadas con la ayuda de otra persona.
- Dependiente Necesita que se le ayude para ello

Cocinar - Baño

- Independiente Cada 48 horas cocina la comida, lee la receta y prepara la comida por sí mismo. Cocina sopa y calienta el bollito. Puede realizar tareas de baño sin persona presente.
- Dependiente Necesita ayuda para ello

PREV **NEXT**

BARTHEL POSITION

Quantifies patient dependency degree.

Escala de coma de Glasgow
Es una escala diseñada para evaluar de manera práctica el nivel de conciencia en los seres humanos

Apariencia motil

- Equitativa A la orden Algunas delicias Ausencia de respuesta motil
- Desorientado completamente Paciente callido Lenguaje incoherente (p. ej. grústicos, susurro, etc.) Conexión de actividad mental

Responde verbal

- Desorientado consciente Lenguaje entubado/delirante (p. ej. ansiedad sobre el tráfico urbano) Extra-estímulo altera retroceso al segmento cognitivo exploratorio
- Responde con frases generales de la mañana Respuesta con extension normal de la memoria Ausencia de respuesta motil

Responde motor

- Obediente a estímulos conscientes
- Responde a estímulos dolorosos (p. ej. pinches sobre el dedo enganchado)
- Responde a estímulos intensos
- Ausencia de respuesta motil

PREV **NEXT** **SAVE**

GLASGOW POSITION

Quantifies coma scale.

Norton
La escala de Norton evalúa el riesgo que tiene un paciente de padecer úlceras por presión

Condición física

- Buena
- Regular
- Pobre
- Muy mala

Estado mental

- Alerta
- Apática
- Confusa
- Inconsciente

Actividad

- Despierto
- Despierto con esfuerzo
- Duerme todo
- Somnolento

Medidas

- Tapa
- Sostiene
- Muy firme
- Aprieta

Necesidades

- Control
- Orientado
- Orientado a la fecha
- Orientado a la persona

SAVE

NORTON POSITION

Quantifies ulcer risk.

Pain
Indique en la escala el nivel de dolor desde 1 en nada de dolor

0 1 2 3 4 5 6 7 8 9 10

0 = Nada 10 = Muy fuerte

PREV **NEXT** **SAVE**

PAIN POSITION

Quantifies pain.



All the information displayed

Smarter looks, smarter attention

medipvitals' unique graphic design is dynamic and easy to use. Medical user habits have been carefully considered to make the platform friendlier. The screen clearly shows all available options with well-organized, duly structured and easily readable information with good visualisation. Just one look and everything's under control.

Measurements are shown with colours and symbols indicating their status. Once data are stabilized, they can be validated for safe storage and ready availability in the system.

Medical device connectivity is shown by indicators, and the system also allows manual measurement editing. This is the ideal way to guarantee process continuity in all circumstances while avoiding operational delays.

Besides the commonly taken vital signs, such as temperature, blood pressure, pulse rate, glucose, or oxygen saturation, medipvitals has its own 12-lead ECG module, with the most common time and amplitude scales, thereby simplifying the analysis and interpretation of results.

The interface displays a grid of 10 patient profiles. Each profile includes a small photo, the patient's name, gender, age, diagnosis, and the date of the latest medical record. The profiles are arranged in five rows and two columns.

Row	Column 1	Column 2
1	Roberio Carlos Perez Hombre - 40 años Diagnóstico: Diabetes Última revisión: 08/03/2013	Audióloga Pérez Mujer - 32 años Diagnóstico: Osteoartritis Última revisión: 08/03/2013
2	Joséfa Sánchez Martínez Mujer - 52 años Diagnóstico: Última revisión: 08/03/2013	Carmen Colomés Mujer - 29 años Diagnóstico: Última revisión: 08/03/2013
3	Sofía Gómez Pérez Mujer - 21 años Diagnóstico: Última revisión: 08/03/2013	Alberto Gómez Pérez Hombre - 26 años Diagnóstico: Última revisión: 08/03/2013
4	Inés Martínez Muñoz Mujer - 34 años Diagnóstico: Última revisión: 08/03/2013	Silvia Martínez Sánchez Mujer - 28 años Diagnóstico: Última revisión: 08/03/2013
5	Carolina Jiménez Gómez Mujer - 26 años Diagnóstico: Última revisión: 08/03/2013	Martín Martínez Muñoz Hombre - 70 años Diagnóstico: Última revisión: 08/03/2013

PATIENT SELECTION

The interface shows a line graph of temperature over time, with a large green circle highlighting the value "39.2". Below the graph is a table of temperature measurements taken at different times on 2013-10-10.

Fecha	Hora	Temperatura
2013/10/10	01:00	38.2
2013/10/10	23:29	38.5
2013/10/10	23:30	38.6
2013/10/10	23:52	38.2
2013/10/10	21:15	38.5
2013/10/10	11:30	38.1
2013/10/10	10:00	38.6
2013/10/10	21:42	38.2
2013/10/10	18:45	38.5
2013/10/10	09:10	38.1
2007/02/11	12:29	37.8
2007/02/11	08:34	38.8

TEMPERATURE RANGE

The interface displays a dashboard with various vital signs and medical data. Key values shown include blood pressure (110/55 mmHg), heart rate (78 BPM), temperature (39.2 °C), oxygen saturation (98 mg/dL), and blood glucose (82 mg/dL). There are also sections for respiratory rate (99 BPM) and pulse rate (50 BPM).

GENERAL VALUES

The interface shows a continuous ECG tracing. On the right, there are several control buttons for adjusting the view, including "Zoom center", "Center view", "Tilt mode", and "Pulse mode".

ECG ANALYSIS

vDashBoard: Access to patient databases

Detailed information for a safer, more accurate and reliable diagnosis

medipvitals is integrated with several HIS (Hospital Information Systems) and EMR (Electronic Medical Records). It is also totally autonomous for healthcare centres without their own EMR systems. All relevant patient data are securely stored to make them available for use at any time and place.

The vDashboard application displays all patients organized by the selected criterion: age, gender, nationality, etc. By selecting one particular patient, you not only access the last record, but also their entire historical record in the form of charts showing status trends and evolution. You can also add notes and measurements to determine care levels required.

Just a click away: extraordinary but true.

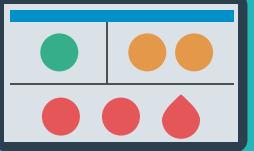




The medipvitals process phases

Fast, simple flow, ensuring guaranteed success

1. The nurse accesses the vClient and selects the patient.
 2. vClient connects to the probes, retrieves the data and displays it.
 3. The nurses validate the data and save it.
 4. vServer retransmits the received data to the HIS servers where they are stored and the relevant EMR.
 5. Data available on vServer can be consulted by healthcare personnel using vDashboard, or the hospital EMR system.
-

- 1 
- 2 
- 3 
- 4 
- 5 



Innovating beyond the extraordinary

medipmobile: Always connected

We provide geographically isolated healthcare staff with total connectivity by integrating functionalities that ensure the interactive transfer of vital signs data to medical centres via new-generation wireless technologies.

medipmobile opens up a whole world of amazing new experiences by cancelling out geographical isolation for physicians out on call. This application is conceived to be self-standing, running independently of available wireless technologies, and it can seamlessly work in online or offline modes. Everything is fully synchronized inside the briefcase. Devices are 'all-in-one': 10" tablet computer, batteries, ECG machine, blood pressure monitor, blood glucose meter, spirometer, thermometer, pulse-oximeter, etc.

We have even gone further by integrating outstanding functionalities that save information locally and transfer it when a wireless network is detected. Imagine a rural doctor interacting with her healthcare centre or accessing information online for an injured person so as to make informed decisions before the patient is even sent to a hospital.

This portable design is amazingly light, compact and comes with a battery that lasts for weeks. Externally, everything has been conceived for easily portability, it is indestructible and has a pressure release valve, it is waterproof and dustproof.



An extraordinary experience.

It was essential for our development team to work hand in hand with healthcare professionals and clinical systems integrators. Together we analyzed needs and requirements, keeping all factors in mind: hospital infrastructure, technology, work habits, user types, locations and patient types. The results were fascinating.

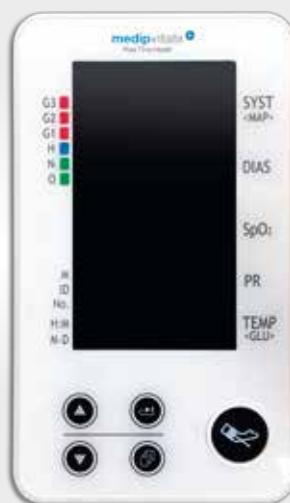
Subsequent user experiences at hospitals were eye-opening. In all cases, patient data was registered instantaneously, reducing availability by 4.5 hours compared to manual data transcription. An average time saving of 15 minutes shift per day was achieved, freeing this time for the improvement of personal patient care.

But time savings and reliability are not the whole story. Patients were found to feel better cared for, as they perceived an improvement in care quality thanks to a safer and more technified environment. Healthcare staff also felt more empowered in their profession, as administrative tasks susceptible to errors had been avoided, and in all cases they perceived a substantial improvement in carrying out routine tasks.

Integrating **medipvitals** in a healthcare organization is simple and efficient, with no rejection problems amongst users, as it improves work habits, works intuitively and streamlines administrative tasks. **medipvitals** is highly functional and can be adapted to existing work flows with total normality.







Devices that work in unison

Simple monitoring with outstanding precision... Healthcare monitoring devices for use at hospitals are characterized by their total precision, and **medipvitals** is no exception to the rule. Monitors synchronized with display screens use simple but advanced technology to show all relevant data at a single touch. Interaction is fast, safe and easy. In addition, our architecture is flexible and open-ended for integration with third-party devices if necessary.

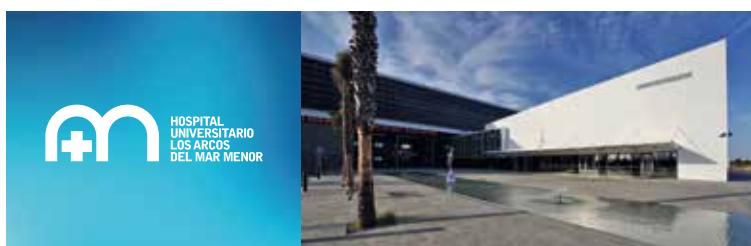
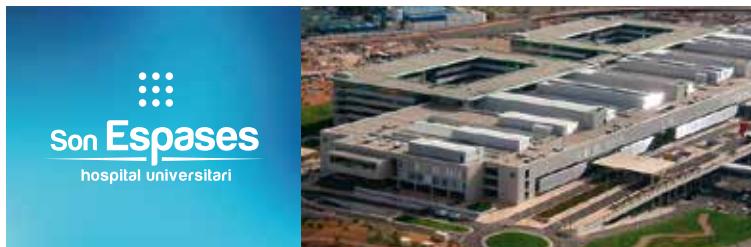
We have also opened the door to full mobility, no matter where patients have to be seen – in hospitals, homes or rural areas. Mobile connectivity is now part of the picture.

Many have already accepted technological evolution

Every day, more and more hospitals choose **mediphealth**.

In the last year, over 100,000 patients have broken the barrier of hospital isolation and now feel more at home thanks to bedside multimedia services. And over 20,000 healthcare professionals have been able to access EMRs (Electronic Medical Records) from the bedside using our multimedia screens.

mediphealth, as the technological partner of these centres, has given them the chance to reduce costs and optimize their healthcare and patient attention tasks inside the hospital room.





Amplitude: 10mm/mV



Time: 25mm/s



Leads

I

II

III

aVf

aVR

aVL

V1

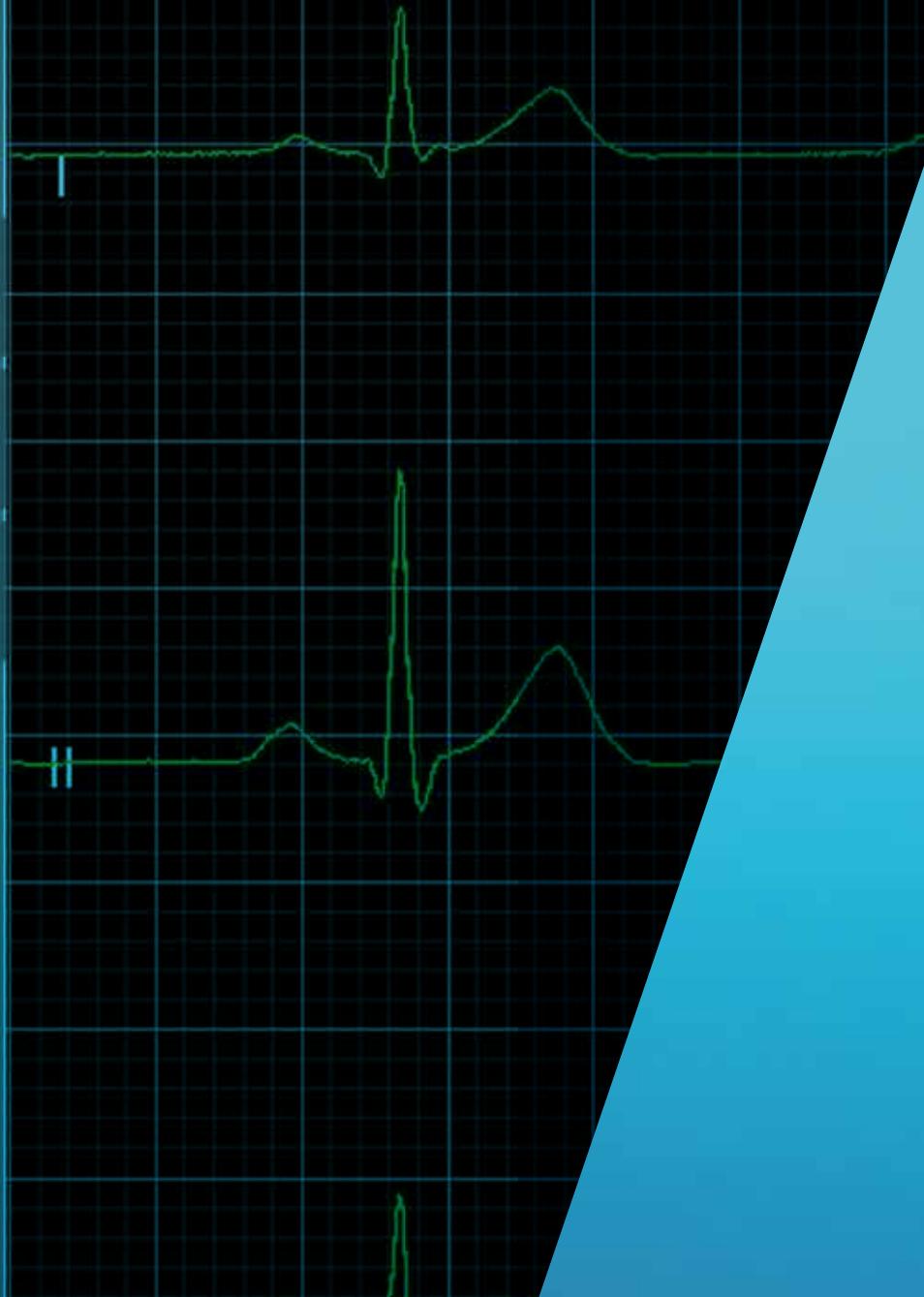
V2

V3

V4

V5

V6



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